

SYNTHESIS OF ^{17}F LABELED FLUOROALKANES

ABSTRACT OF THE DISCLOSURE

Fluoroalkanes such as fluoromethane labeled with ^{17}F are produced by contacting ^{17}F labeled F_2 with alkanes, preferably methane, substituted or 5 unsubstituted alkenes, or substituted or unsubstituted alkynes in the presence of a metal oxide catalyst, preferably a silver oxide catalyst, to produce the ^{17}F labeled fluoroalkane. The ^{17}F may be produced by irradiating ^{20}Ne with protons, preferably having an energy of about 11 MeV and produced by a cyclotron. The ^{17}F labeled fluoromethane or fluoroalkanes may be produced continuously. A method for 10 determining the location of an ^{17}F labeled tracer includes generating an ^{17}F labeled fluoroalkane, administering the ^{17}F labeled fluoroalkane to a test subject, and scanning the test subject with a radiosensitive detector such as a positron emission tomography scanner.